THE POWER OF COMFORT

Benefits of well-tolerated fiber
THE RELATIONSHIP BETWEEN DIGESTION AND TOLERANCE

Indigestible carbohydrates such as sugar alcohols and dietary fibers escape complete digestion and absorption, increase osmotic pressure in the digestive tract, and can be fermented in the large intestine by gut microbes. This increase in osmotic pressure and off-gas from fermentation can cause distension in the gut and lead to bloating, flatus, cramping and other gastrointestinal side effects.

Differences in fermentation rates can have significant impact on the severity of gastrointestinal side effects and in turn, determine the tolerability of a dietary fiber.

Soluble fibers are often used in many functional and/or low-calorie food and beverage products. However, not all are created equal. The smaller molecular weight indigestible carbohydrates are more rapidly fermented by microflora resulting in faster rates of fermentation. Rapid fermentation is associated with greater gastrointestinal side effects and discomfort.

Larger molecular weight soluble dietary fibers are more slowly fermented and are associated with fewer side effects and significantly higher levels of digestive tolerance.
A high-quality line of well-tolerated soluble prebiotic dietary fiber ingredients, Fibersol® is a resistant maltodextrin that is not associated with severe gastrointestinal symptoms.

In a study to determine the maximum dose of resistant maltodextrin that does not cause severe symptoms of gastrointestinal discomfort such as bloating, gas or diarrhea, Fibersol® was associated with relatively no side effects.

Over 30 years of extensive clinical research have proven Fibersol® to be well tolerated up to 68 grams per day.

By the Numbers: How Fibersol® Stacks up to Other Fibers

Fibersol® is well tolerated vs. other soluble fibers, delivering desired benefits without digestive intolerance or gastric discomfort—even when consumed in a variety of products throughout the day.

Over 4x the tolerance of inulin!

15g Polydextrose
5g-10g Oligofructose (FOS)
10g-15g Inulin
68g Fibersol®

Daily Limit (g/day)
Fibersol® resists digestion in both the stomach and small intestine. Since it is not absorbed by the small intestine, there’s virtually no serum glucose response or increase in blood sugars when consumed by itself.\(^7\)

In a range of studies\(^8\text{–}10\), Fibersol® was shown to increase fecal bulk,\(^11\) decrease constipation symptoms and support stool frequency.

As Fibersol® passes through the small intestine, osmotic pressure is increased, which helps improve movement through the colon. Fibersol® escapes hydrolysis by human digestive enzymes and reaches the large intestine,\(^4\) where it is slowly fermented by intestinal bacterial flora compared to other soluble fibers and fermentable carbohydrates.
**Short Chain Fatty Acid Production**

In a model representing large intestine fermentation, gut bacteria begins to ferment Fibersol® into short chain fatty acids (SCFAs), which are important to maintaining a healthy gut environment and can encourage health-promoting properties such as improved intestinal movement, better ratio of beneficial bacteria like Bifidobacteria, and enhanced absorption of certain minerals.

**The Proof is in the pH**

When fiber is fermented in the colon, SCFAs and off-gas are produced. The production of SCFAs lowers the pH of the colon. The rate at which the pH of the colon drops is indicative of the rate of fermentation and off-gas. Since Fibersol® ferments slower than fibers like FOS or inulin, as reflected in slower decrease of in vitro pH, there is far less rapid off-gassing, and therefore, less gastrointestinal discomfort.
Even though nearly 80% of consumers believe that fiber is important and try to include it in their diets, their efforts aren’t always successful: more than 95% fall short.

Fiber is the top ingredient consumers seek.65% of consumers associate fiber with boosting their immune system.14

Nearly 2/3 of consumers say they are adding or increasing fiber in their diet, up 6% in recent years.1

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It can be a challenge to achieve the daily recommended value of fiber by consuming traditional food products alone.

Current Daily Value (DV) for total dietary fiber: 28g per day (for typical 2,000 calorie per day diet)

There’s a fiber gap for consumers between adequate intake and actual intake, and

“...surveys indicate that only about 5% of the population meets recommendations, and inadequate intakes have been called a public health concern.”13
They may not always know the exact source of digestive discomfort, but it still impacts repeat purchases. Often, consumers blame their personal diet choices or emotional health conditions; however, the fiber source in better-for-you food and beverages may be playing a role in their discomfort.

The majority of consumers (nearly 70%) said they would NOT purchase a product again if it caused gastrointestinal discomfort.¹

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REPEAT PURCHASES START HERE
Especially in high fiber products, well-tolerated Fibersol® helps create repeat purchase opportunities.

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HIGH-FIBER PRODUCTS ARE ON TARGET WITH TODAY’S DEMANDS

Fortified and reduced sugar products are high in demand and may be consumed regularly throughout the day. Fiber supports these formulations, but can cause discomfort if the tolerance limit is reached quickly.

Fibersol® is well tolerated—at up to 68g per day.

Not all fiber is created equal!

HIGH PROTEIN/FIBER BAR OR SNACK
9-13g fiber per bar

MEAL REPLACEMENT BEVERAGE
5-6g fiber per serving

HEALTH HALO FROZEN DESSERT
4g fiber per serving or 12-14g fiber per pint

OTHER SOLUBLE FIBERS

FIBERSOL®

~ 22+g fiber
(when most fibers index at 15g per day)

It all adds up!

With products containing less-tolerable fiber ingredients, consumers may feel discomfort as they nourish and snack throughout the day.

Fibersol® allows for positive nutrition and indulgences without any gastrointestinal discomfort—from morning to night.

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Digestive health and additional benefits, with science you can trust

Fibersol® helps you offer healthy digestion. Even better? Nutrition-forward prebiotic fiber can help promote the gut microbiome, which plays an important role in overall immune function.

**Digestive Health**
At 4-8g daily, Fibersol® is shown to:
- Help support or maintain intestinal regularity
- Help relieve occasional constipation
- Support gut health
- Improve stool consistency (selected studies)

**Prebiotic**
At 6g per serving, Fibersol® is shown to:
- Help nourish the intestinal flora and maintain a healthy intestinal tract environment

**Satiety**
At 10g with a meal, Fibersol® may:
- Delay hunger and stimulate appetite-regulating hormones

**Post-Meal Blood Glucose and Insulin**
At 4-6g with each meal, Fibersol® is shown to:
- Help reduce blood sugar levels after a meal
- Help minimize blood sugar spikes after a meal

**Post-Meal Triglycerides**
At 5-6g with each meal, Fibersol® is shown to:
- Help attenuate the rise in blood triglycerides following the meal
- Help retain healthy triglyceride levels following the meal

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PROMOTE TOTAL WELLBEING WITH WELL-TOLERATED FIBERSOL®

The Fibersol® line of soluble dietary fiber ingredients have been shown to help maintain intestinal regularity—while being gentler. Since Fibersol® is fermented in the colon at a slower rate, compared to other soluble fibers such as inulin or oligofructose, it helps minimize bloating or gastric discomfort.

Not only does Fibersol® help today’s wellness-minded consumers maintain intestinal regularity and a healthy digestive system, it does so comfortably.

Sources
6. As codified by FDA.

Fibersol® is supported by the joint venture between Archer Daniels Midland Company, Matsutani Chemical Industry Co., Ltd., and Matsutani America, Inc., a global selling and marketing partnership combining strong technical and scientific expertise with a vast global production and transportation network, for a high-quality food ingredient backed by attentive, reliable service and supply.

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